

RECEIVED
CENTRAL FAX CENTER

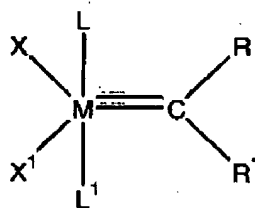
Amendment to the Claims:

DEC 13 2006

This listing of claims will replace all prior versions and listings of claims in the application. Please note that no changes to the claims have been presently made.

Listing Of Claims:

1. (Original) A process for the preparation of a, optionally hydrogenated, nitrile rubber comprising the steps of
 - a) reacting a nitrile rubber in the absence of any co-olefin and in the presence of at least one compound selected from the group consisting of compounds of the general formulas I, II, III or IV,



Formula I

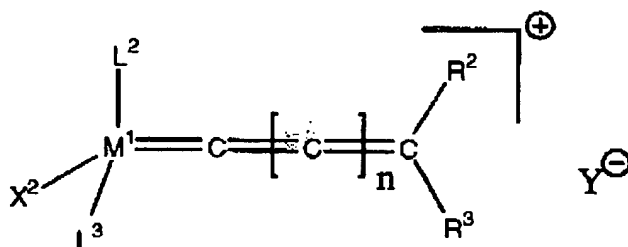
wherein:

M is Os or Ru,

R and R¹ are, independently, hydrogen or a hydrocarbon selected from the group consisting of C₂-C₂₀ alkenyl, C₂-C₂₀ alkynyl, C₁-C₂₀ alkyl, aryl, C₁-C₂₀ carboxylate, C₁-C₂₀ alkoxy, C₂-C₂₀ alkenyloxy, C₂-C₂₀ alkynyloxy, aryloxy, C₂-C₂₀ alkoxycarbonyl, C₁-C₂₀ alkylthio, C₁-C₂₀ alkylsulfonyl and C₁-C₂₀ alkylsulfanyl,

X and X¹ are independently any anionic ligand,

L and L¹ are, independently any neutral ligand, optionally, L and L¹ can be linked to one another to form a bidentate neutral ligand;



Formula II

wherein:

M¹ is Os or Ru;

R² and R³ are, independently, hydrogen or a hydrocarbon selected from the group consisting of C₂-C₂₀ alkenyl, C₂-C₂₀ alkynyl, C₁-C₂₀ alkyl, aryl, C₁-C₂₀ carboxylate, C₁-C₂₀ alkoxy, C₂-C₂₀ alkenyloxy, C₂-C₂₀ alkynyloxy, aryloxy, C₂-C₂₀ alkoxycarbonyl, C₁-C₂₀ alkylthio, C₁-C₂₀ alkylsulfonyl and C₁-C₂₀ alkylsulfinyl,

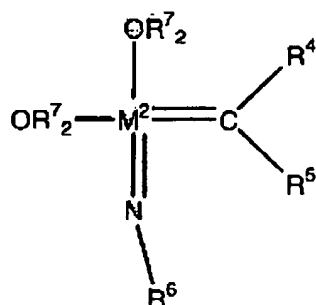
X² is an anionic ligand; and

L² is a neutral mono- or polycyclic π -bonded ligand,

L³ is a ligand selected from the group consisting of phosphines, sulfonated phosphines, fluorinated phosphines, functionalized phosphines bearing up to three aminoalkyl-, ammoniumalkyl-, alkoxyalkyl-, alkoxycarbonylalkyl-, hydroxycarbonylalkyl-, hydroxyalkyl- or ketoalkyl- groups, phosphites, phosphinites, phosphonites, phosphinamines, arsines, stibenes, ethers, amines, amides, imines, sulfoxides, thioethers and pyridines,

Y⁻ is a non-coordinating anion,

n is an integer in the range of from 0 to 5,



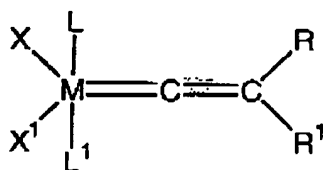
Formula III

wherein

M^2 is Mo or W,

R^4 , R^5 are, independently, hydrogen or a hydrocarbon selected from the group consisting of C_2 - C_{20} alkenyl, C_2 - C_{20} alkynyl, C_1 - C_{20} alkyl, aryl, C_1 - C_{20} carboxylate, C_1 - C_{20} alkoxy, C_2 - C_{20} alkenyloxy, C_2 - C_{20} alkynyloxy, aryloxy, C_2 - C_{20} alkoxycarbonyl, C_1 - C_{20} alkylthio, C_1 - C_{20} alkylsulfonyl and C_1 - C_{20} alkylsulfinyl;

R^6 and R^7 are independently selected from any unsubstituted or halo-substituted alkyl, aryl, aralkyl groups or silicon-containing analogs thereof,



Formula IV

wherein

M is Os or Ru,

R and R^1 are independently selected from the group consisting of hydrogen, substituted or unsubstituted alkyl, and substituted or unsubstituted alkyl

X and X^1 are independently any anionic ligand, and

L and L¹ are independently any neutral ligand;
and optionally

b) hydrogenating the product of step a).

2. (Original) A process according to Claim 1 wherein the hydrogenation is performed under homogeneous catalytic conditions.
3. (Original) A process according to Claim 2 wherein the homogeneous catalytic reduction is carried out *in situ* without first isolating the product of step a).
4. (Original) A process according to Claim 1 wherein no further hydrogenation catalyst is added before or during step b).
5. (Original) A process according to Claim 1, wherein the metathesis catalyst is a compound of Formula I wherein L and L¹ are independently selected from the group consisting of trialkylphosphines, imidazolidinylidenes or imidazolidines.
6. (Original) A process according to Claim 5 wherein either L or L¹ is a trialkylphosphine and the remaining ligand is a imidazolidinylidenes, X and X¹ are chloride ions and M is ruthenium.
7. (Original) A process according to Claim 6 wherein the ratio of compound to nitrile rubber is in the range of from 0.005 to 5.
8. (Original) A process according to Claim 7, wherein the process is carried out in an inert solvent selected from the group consisting of monochlorobenzene, dichloromethane, benzene, toluene, tetrahydrofuran and cyclohexane.
9. (Original) A process according to Claim 1, wherein the hydrogenation is carried out using a catalyst of formula:

PO-8041

-5-



wherein each R^B is independently selected from the group consisting of a C_1 - C_8 -alkyl group, a C_4 - C_8 -cycloalkyl group, a C_6 - C_{15} -aryl group and a C_7 - C_{15} -aralkyl group;

B is selected from the group consisting of phosphorus, arsenic, sulfur, and a sulfoxide group ($S=O$);

X^3 is selected from the group consisting of hydrogen and an anion; and

l is 2, 3 or 4, m is 2 or 3 and n is 1, 2 or 3.

10. (Original) A process according to Claim 9 wherein the hydrogenation catalyst is $(PPh_3)_3RhCl$.
11. (Original) An, optionally hydrogenated, nitrile rubber having a molecular weight (M_w) in the range of from 20,000 to 250,000, a Mooney viscosity (ML 1+4 @ 100 deg. C) of in the range of from 1 to 50, and a MWD (or polydispersity index) of less than 2.5.
12. (Original) A polymer composite comprising at least one, optionally hydrogenated, nitrile rubber polymer having a Mooney viscosity (ML 1+4 @ 100°C) in the range of from 50-30, at least one filler and optionally at least one cross-linking agent.
13. (Original) A polymer composite according to Claim 12 wherein the raw polymer Mooney viscosity (ML 1+4 @ 100°C) is below 50.
14. (Original) A polymer composite according to Claim 12 wherein the polymer composite further comprises a peroxide system.
15. (Original) A process for preparing a polymer composite according to Claim 12 comprising reacting at least one, optionally hydrogenated, nitrile rubber

PO-8041

-6-

polymer having a Mooney viscosity (ML 1+4 @ 100°C) in the range of from 50-30, at least one filler and optionally at least one cross-linking agent.

16. (Original) A process for the manufacture of a shaped article comprising the step of injection molding a polymer composite comprising at least one, optionally hydrogenated, nitrile rubber polymer having a Mooney viscosity (ML 1+4 @ 100°C) in the range of from 50-30, at least one filler and at least one cross-linking agent.
17. (Original) A process according to Claim 16, wherein the shaped article is seal, hose, bearing pad, stator, well head seal, valve plate, cable sheathing, wheel, roller, in place gaskets or pipe seal.